

What is claimed is:

1. A reflective sensor used to detect presence or absence of a subject to be detected at a detecting position, the reflective sensor comprising:

5 a sensor portion having a light-emitting element for emitting light toward the detecting position, and a light-receiving element for receiving light emitted from the light-emitting element and reflected on the subject to be detected present at the detecting position and generating an
10 electrical signal corresponding to a quantity of received light; and

 a filter, disposed between the sensor portion and the detecting position and made of a light-transmitting material capable of transmitting light heading to the detecting position
15 from the light-emitting element and light heading to the light-receiving element from the subject to be detected at the detecting position, for preventing intrusion of dust into the sensor portion,

 wherein a surface of the filter on a side of the sensor
20 portion is formed into a tapered shape having a first inclined plane opposing the light-emitting element, a second inclined plane opposing the light-receiving element, and a ridge portion formed where the first and second inclined planes meet, the ridge portion extending in a space between the light-emitting
25 element and the light-receiving element.

2. The reflective sensor according to Claim 1, wherein a surface of the filter on an opposite side to the sensor portion is formed as a flat plane.

5

3. The reflective sensor according to Claim 1, wherein each of the first and second inclined planes is inclined to near the sensor portion in a direction to an intermediate position between the light-emitting element and the light-receiving
10 element.

4. A filter for a reflective sensor used for a reflective sensor that detects presence or absence of a subject to be detected at a detecting position and includes a sensor portion
15 having a light-emitting element for emitting light toward the detecting position, and a light-receiving element for receiving light emitted from the light-emitting element and reflected on the subject to be detected present at the detecting position and generating an electrical signal corresponding to a quantity
20 of received light, the filter being disposed between the sensor portion and the detecting position and thereby preventing intrusion of dust in the sensor portion, wherein:

the filter is made of a light-transmitting material capable of transmitting light heading to the detecting position
25 from the light-emitting element and light heading to the

light-receiving element from the subject to be detected at the detecting position; and

a surface of the filter on a side of the sensor portion is formed into a tapered shape having a first inclined plane opposing the light-emitting element, a second inclined plane
5 opposing the light-receiving element, and a ridge portion formed where the first and second inclined planes meet.

5. The filter for a reflective sensor according to Claim
10 4, wherein a surface of the filter on an opposite side to the sensor portion is formed as a flat plane.

6. The filter for a reflective sensor according to Claim
4, wherein each of the first and second inclined planes is
15 inclined to near the sensor portion in a direction to an intermediate position between the light-emitting element and the light-receiving element.

7. A method of detecting presence or absence of a subject
20 to be detected at a detecting position, the method comprising:

a step of disposing a filter at a position opposing the detecting position, the filter being made of a light-transmitting material capable of transmitting light, a surface of which on a side opposite to the detecting position
25 being made into a tapered shape having first and second inclined

planes and a ridge portion formed where the first and second inclined planes meet;

a step of irradiating detection light at the detecting position through the filter from a position opposing the first
5 inclined plane; and

a step of detecting reflected light of the detection light reflected on a surface of the subject to be detected through the filter, at a position opposing the second inclined plane.